Protocol Implementation Conformance Statement for the IEC 61850 interface in MVI56E-61850C

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UCA International Users Group
Testing Sub Committee

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1. General

The following ACSI conformance statements are used to provide an overview and details about MVI56E-61850C, with firmware version 1.01.022:

— ACSI basic conformance statement,
— ACSI models conformance statement,
— ACSI service conformance statement

The statements specify the communication features mapped to IEC 61850-8-1 and IEC 61850-9-2.

2. ACSI basic conformance statement

The basic conformance statement is defined in Table A.1.

Table A.1 – Basic conformance statement

		Client/ Subscriber	Server/ Publisher	Value/ Comments
Client-Server roles				
B11	**Server** side (of TWO-PARTY-APPLICATION-ASSOCIATION)	N/A	No	
B12	**Client** side of (TWO-PARTY-APPLICATION-ASSOCIATION)	Yes	N/A	
SCSMs supported				
B21	**SCSM**: IEC 61850-8-1 used	Yes	Yes	
B22	**SCSM**: IEC 61850-9-1 used	N/A	N/A	Deprecated Ed2
B23	**SCSM**: IEC 61850-9-2 used	No	No	
B24	**SCSM**: other			
Generic substation event model (GSE)				
B31	**Publisher** side	N/A	Yes	
B32	**Subscriber** side	Yes	N/A	
Transmission of sampled value model (SVC)				
B41	**Publisher** side	N/A	No	
B42	**Subscriber** side	No	N/A	

N/A = not applicable
Yes = supported
No or empty = not supported

3. ACSI model conformance statement

The ACSI models conformance statement is defined in Table A.2.

Table A.2 – ACSI models conformance statement

		Client/Subscriber	Server/Publisher	Value/ Comments
If **Server** side (B11) and/or **Client** side (B12) supported				
M1	**Logical device**	Yes	No	
M2	**Logical node**	Yes	No	
M3	**Data**	Yes	No	
M4	**Data set**	Yes	No	
M5	**Substitution**	No	No	
M6	**Setting group control**	No	No	
	Reporting	Yes	No	
M7	**Buffered report control**	Yes		
M7-1	sequence-number	Yes		
M7-2	report-time-stamp	Yes		
M7-3	reason-for-inclusion	Yes		
M7-4	data-set-name	Yes		
M7-5	data-reference	Yes		
M7-6	buffer-overflow	Yes		
M7-7	entryID	Yes		
M7-8	BufTm	Yes		
M7-9	IntgPd	Yes		
M7-10	GI	Yes		
M7-11	conf-revision	Yes		
M8	**Unbuffered report control**	Yes		
M8-1	sequence-number	Yes		
M8-2	report-time-stamp	Yes		
M8-3	reason-for-inclusion	Yes		
M8-4	data-set-name	Yes		
M8-5	data-reference	Yes		
M8-6	BufTm	Yes		
M8-7	IntgPd	Yes		
M8-8	GI	Yes		
M8-9	conf-revision	Yes		
	Logging	No	No	
M9	**Log control**			
M9-1	IntgPd			
M10	**Log**			
M11	**Control**	Yes	No	

		Client/Subscriber	Server/Publisher	Value/ Comments
M17	**File Transfer**	No	No	
M18	**Application association**	Yes	No	
M19	**GOOSE Control Block**	Yes	No	
M20	**Sampled Value Control Block**	No	No	
If **GSE** (B31/32) is supported				
M12	**GOOSE**	Yes	Yes	
M13	**GSSE**			Deprecated since Ed2
If **SVC** (B41/42) is supported				
M14	Multicast SVC			
M15	Unicast SVC			
For all IEDs				
M16	**Time**	Yes	Yes	Time source with required accuracy shall be available. Only Time Master are SNTP (Mode 4 response) time server. All other Client / Server devices are SNTP (Mode 3 request) clients. The environment intended for this device supports PTP but not SNTP, and in that environment this device is a PTP master.

Yes = service is supported

No or empty = service is not supported

The ACSI service conformance statement is defined in Table A.3 (depending on the statements in Table A.1 and in Table A.2).

Table A.3 – ACSI service conformance statement

	Ed.	Services	AA: TP/MC	Client (C)	Server (S)	Comments
Server (If Server side (B11) and/or Client side (B12) supported)						
S1	1,2	GetServerDirectory (LOGICAL-DEVICE)	TP	No	No	
Application association (If Server side (B11) and/or Client side (B12) supported)						
S2	1,2	Associate	TP	Yes	No	
S3	1,2	Abort	TP	Yes	No	
S4	1,2	Release	TP	Yes	No	
Logical device (If M1)						
S5	1,2	GetLogicalDeviceDirectory	TP	No	No	
Logical node (If M2)						
S6	1,2	GetLogicalNodeDirectory	TP	No	No	
S7	1,2	GetAllDataValues	TP	No	No	
Data (If M3)						
S8	1,2	GetDataValues	TP	Yes	No	
S9	1,2	SetDataValues	TP	No	No	
S10	1,2	GetDataDirectory	TP	No	No	
S11	1,2	GetDataDefinition	TP	Yes	No	
Data set (If M4)						
S12	1,2	GetDataSetValues	TP	No	No	
S13	1,2	SetDataSetValues	TP	No	No	
S14	1,2	CreateDataSet	TP	No	No	
S15	1,2	DeleteDataSet	TP	No	No	
S16	1,2	GetDataSetDirectory	TP	Yes	No	
Substitution (If M5)						
S17	1	SetDataValues	TP			

	Ed.	Services	AA: TP/MC	Client (C)	Server (S)	Comments
Setting group control ((If M6)						
S18	1,2	SelectActiveSG	TP			
S19	1,2	SelectEditSG	TP			
S20	1,2	SetEditSGValues	TP			
S21	1,2	ConfirmEditSGValues	TP			
S22	1,2	GetEditSGValues	TP			
S23	1,2	GetSGCBValues	TP			
Reporting						
Buffered report control block (BRCB) (If M7)						
S24	1,2	Report	TP	Yes		
S24-1	1,2	data-change (dchg)		Yes		
S24-2	1,2	quality-change (qchg)		Yes		
S24-3	1,2	data-update (dupd)		Yes		
S25	1,2	GetBRCBValues	TP	Yes		
S26	1,2	SetBRCBValues	TP	Yes		
Unbuffered report control block (URCB) (If M8)						
S27	1,2	Report	TP	Yes		
S27-1	1,2	data-change (dchg)		Yes		
S27-2	1,2	quality-change (qchg)		Yes		
S27-3	1,2	data-update (dupd)		Yes		
S28	1,2	GetURCBValues	TP	Yes		
S29	1,2	SetURCBValues	TP	Yes		
Logging						
Log control block (If M9)						
S30		GetLCBValues	TP			
S31		SetLCBValues	TP			
Log (If M9)						
S32		QueryLogByTime	TP			
S33		QueryLogAfter	TP			
S34		GetLogStatusValues	TP			
Generic substation event model (GSE)						
GOOSE (If M12)						
S35	1,2	SendGOOSEMessage	MC	Yes	Yes	
GOOSE-CONTROL-BLOCK (If M12)						
S36	1,2	GetGoReference	TP	Yes	No	
S37	1,2	GetGOOSEElementNumber	TP	No	No	
S38	1,2	GetGoCBValues	TP	Yes	No	
S39	1,2	SetGoCBValues	TP	No	No	

	Ed.	Services	AA: TP/MC	Client (C)	Server (S)	Comments
GSSE (If M13)						
S40	1	SendGSSEMessage	MC	N/A	N/A	Deprecated in Edition 2
GSSE-CONTROL-BLOCK (If M13)						
S41	1	GetReference	TP	N/A	N/A	Deprecated in Edition 2
S42	1	GetGSSEElementNumber	TP	N/A	N/A	Deprecated in Edition 2
S43	1	GetGsCBValues	TP	N/A	N/A	Deprecated in Edition 2
S44	1	SetGsCBValues	TP	N/A	N/A	Deprecated in Edition 2

Transmission of sampled value model (SVC)						
Multicast SV (If M14)						
S45	1,2	SendMSVMessage	MC			
Multicast Sampled Value Control Block (If M14)						
S46	1,2	GetMSVCBValues	TP			
S47	1,2	SetMSVCBValues	TP			
Unicast SV (If M15)						
S48	1,2	SendUSVMessage	TP			
Unicast Sampled Value Control Block (If M15)						
S49	1,2	GetUSVCBValues	TP			
S50	1,2	SetUSVCBValues	TP			
Control (If M11)						
S51	1,2	Select		Yes		
S52	1,2	SelectWithValue	TP	Yes		
S53	1,2	Cancel	TP	No		
S54	1,2	Operate	TP	Yes		
S55	1,2	CommandTermination	TP	Yes		
S56	1,2	TimeActivatedOperate	TP	No		
File Transfer (If M17)						
S57	1,2	GetFile	TP			
S58	1,2	SetFile	TP			
S59	1,2	DeleteFile	TP			
S60	1,2	GetFileAttributeValues	TP			
S61	1,2	GetServerDirectory (FILE-SYSTEM)	TP			

	Ed.	Services	AA: TP/MC	Client (C)	Server (S)	Comments
Time (If M16)						
T1	1,2	Time resolution of internal clock		24	24	Nearest negative power of 2-n in seconds (number 0 .. 24)
T2	1,2	Time accuracy of internal clock		T5	T5	TL (ms) (low accuracy), T3 < 7) (only Ed2) T0 (ms) (<= 10 ms), 7 <= T3 < 10 T1 (µs) (<= 1 ms), 10 <= T3 < 13 T2 (µs) (<= 100 µS), 13 <= T3 < 15 T3 (µs) (<= 25 µS), 15 <= T3 < 18 T4 (µs) (<= 25 µS), 18 <= T3 < 19 T5 (µs) (<= 1 µS), T3 >= 20
T3	1,2	Supported TimeStamp resolution	-	20	20	Nearest value of 2-n in seconds (number 0 .. 24) As the environment intended for this device supports PTP but not SNTP, protocol PTP is assumed.

N/A = not applicable
Yes = supported
No or empty = not supported